

| | Type | L # | Hits | Search Text | DBs | Time Stamp |
|----|------|-----|------|---|-----------|----------------------|
| 1 | BRS | L1 | 1 | 5372600.pn. and shape\$ | USPA T | 2003/04/1 8 10:30 |
| 2 | BRS | L2 | 1 | 5372600.pn. and shape\$ and cross adj3 section | USPA T | 2003/04/1 8 10:32 |
| 3 | BRS | L3 | 0 | 5246445.pn. and shape\$ and cross adj3 section | USPA T | 2003/04/1 8 10:32 |
| 4 | BRS | L4 | 1 | 5246445.pn. and shape\$ | USPA T | 2003/04/1 8 10:32 |
| 5 | BRS | L5 | 204 | rectangul\$ and coil\$ same stent | USPA T | 2003/04/1 8 10:34 |
| 6 | BRS | L6 | 91 | rectangul\$ same cross adj3 section and coil\$ same stent | USPA T | 2003/04/1 8 10:35 |
| 7 | BRS | L7 | 58 | rectangul\$ same cross adj3 section and (coil or coiled) adj4 stent | USPA T | 2003/04/1 8 10:40 |
| 8 | BRS | L8 | 48 | helical and coil same muscle same tissue | USPA T | 2003/04/1 8 10:41 |
| 9 | BRS | L9 | 22 | helical same coil same muscle same tissue | USPA T | 2003/04/1 8 10:42 |
| 10 | BRS | L10 | 2 | TMR and prosthe\$ and heart same muscle and tissue | USPA T | 2003/04/1 8 10:43 |
| 11 | BRS | L11 | 28 | Transmyocar\$ and prosthe\$ and heart same muscle and tissue | USPA T | 2003/04/1 8 10:43 |

| | Comments | Error Definition | Errors |
|-----------|-----------------|-----------------------------|---------------|
| 1 | | Truncation overflow. | 1 |
| 2 | | Truncation overflow. | 1 |
| 3 | | Truncation overflow. | 1 |
| 4 | | Truncation overflow. | 1 |
| 5 | | Truncation overflow. | 1 |
| 6 | | Truncation overflow. | 1 |
| 7 | | | 0 |
| 8 | | | 0 |
| 9 | | | 0 |
| 10 | | | 0 |
| 11 | | | 0 |

US-PAT-NO:

5092877

DOCUMENT-IDENTIFIER: US 5092877 A

See image for Certificate of Correction

TITLE:

Radially expandable endoprosthesis

----- KWIC -----

Various currently known stent products have structures that are essentially coiled springs. When this type of spring stent is tightly coiled, its diameter is relatively small for insertion through a blood vessel or the like. When the coil is sprung or coiled more loosely, the stent assumes its expanded, implantation orientation. Maass et al U.S. Pat. No. 4,553,545 is illustrative of this type of coiled spring stent or endoprosthesis. Multihelix or braided stents are also known. Stents of this general type suffer from poor maneuverability, and they are relatively thick walled and three dimensional. They are also difficult to remove once implanted, and they may exhibit numerous exposed, relatively sharp or jagged ends. Palmaz U.S. Pat. No. 4,733,665 is representative of an expandable stent of this general type. Gianturco U.S. Pat. No. 4,580,568 illustrates a percutaneous endovascular stent formed of stainless steel wire that is arranged in a closed zig-zag pattern somewhat in the nature of a bookbinder spring. Such a structure is somewhat unsymmetrical, and it may be subject to reocclusion due to the very large open space that is typically present between the wires of this type of device. Another type of stent is known as a Statz stent, and it includes a hypodermic tube with longitudinal slots etched into its body. While such a

device has a high ratio of unexpanded to expanded diameter, it is a comparatively rigid, sharp-edged device which is difficult to maneuver through a tortuous path and is not easily removed in a transluminal manner.

An understanding of the manner in which the endoprostheses according to this invention, such as the stent 31, can be made will be obtained from a consideration of FIGS. 1, 2 and 3. FIG. 1 shows a mandrel 38 that has a cross-sectional configuration that is somewhat oval in shape. Mandrel 38 can, for example, be a circular tube or rod that has been flattened on two opposing longitudinal portions in order to provide a cross-section that is generally rectangular in shape, with two opposing end portions thereof being arcuate or rounded. The mandrel is preferably composed of a malleable metal such as copper or the like.

The materials out of which stents according to the present invention can be made, and especially the expandable segments thereof, fall into two general categories. The material can be either elastic or generally inelastic. Examples of elastic materials include spring steels, stainless steel, Nitinol metal alloy, Elgiloy metal alloy, an alloy known as NP36N metal alloy, and the like. Generally inelastic materials can be characterized as being malleable. Included are tantalum, titanium, silver, gold, and annealed versions of the elastic materials described herein. Polymers may also be used, such as polyether sulfone, polyimide, polycarbonate, polypropylene, ultra high molecular weight polyethylene, carbon fiber, Kevlar polymer, and the like. It is also possible to coat these materials with porous or textured surfaces for cellular ingrowth and the like or with non-thrombogenic

agents such as pyrolytic carbon, heparin, hydrogels, Teflon polymer materials, silicones, polyurethanes and the like. The stents can be treated so that drugs can be eluted therefrom. It is also possible that certain stents may be made of biodegradable materials. In any event, the stent material, of course, is to be biocompatible. It should also be appreciated that the strand of stent material can be round in cross-section as is typical of wires, or it can be flat or rectangular in cross-section, for example.

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|---|------|-----|------|---|-----------|----------------------|
| 1 | BRS | L1 | 0 | moduli\$ adj3 elast\$ adj9 varie\$ and stent | USPA T | 2003/04/1 8 15:26 |
| 2 | BRS | L4 | 32 | modul\$ same elast\$ and stent | USPA T | 2003/04/1 8 15:28 |
| 3 | BRS | L5 | 39 | moduli\$ same elast\$ and stent | USPA T | 2003/04/1 8 15:29 |

| | Comments | Error Definition | Errors |
|----------|-----------------|-----------------------------|---------------|
| 1 | | Truncation overflow. | 1 |
| 2 | | Truncation overflow. | 1 |
| 3 | | Truncation overflow. | 1 |

US-PAT-NO: 6053943

DOCUMENT-IDENTIFIER: US 6053943 A

TITLE: Endoluminal graft with integral
structural support and
method for making same

----- KWIC -----

The object of the present invention is to provide an structurally supported intraluminal graft useful as an endovascular graft which can be radially expanded in vivo, similar to endovascular stents described in U.S. Pat. No. 4,733,665 issued to Palmaz and U.S. Pat. No. 4,580,568 issued to Gianturco, which are well known in the art and which are currently being employed in many endovascular applications. The purpose of the present invention is to provide means which function to provide radial reinforcement for the graft, permitting radial expansion thereof, and which permits affixing the graft within an anatomical passageway such as a blood vessel.

The Wall patent, U.S. Pat. No. 5,192,307 describes a radially expandable compliant prosthesis having metal springs embedded into the wall of the prosthesis. The prosthesis comprises a stent including a wall with a hook and hook means. The stent comprises a network of stainless steel or woven plastic covered by a plastic material. A plurality of circumferential ribs are placed about the stent to engage the arterial walls and prevent the inadvertent movement of the stent.

The Schwartz et al. patent, U.S. Pat. No. 5,282,823, describes a stent

comprising a cylindrical body having a plurality of substantially helical metal elements joined together with a polymeric film extending between adjacent helical metal elements. The polymeric film has strain relief sections consisting of slits or cuts in the film between adjacent helical elements. The helical elements allow flexing of the stent along its longitudinal axis.

The Tessmann et al. patent, U.S. Pat. No. 5,167,614, describes a prostatic stent comprising a coiled rigid sheet, which may be expanded, and a plurality of hook like projections on the outer wall of the coil for anchoring the stent to the wall of a body passage. However, a grasping tool is required to expand and anchor the stent.

7. The endoluminal prosthesis of claim 6, wherein the plurality of first and second strain relief sections each comprise longitudinal regions of the structural support member having differential moduli of elasticity.